Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP: \_\_\_\_\_\_\_

HW#12H: Midpoint

Honors Geometry

Due Date: Monday, Sept. 24th

**Failure to show work on all problems or use complete sentences will result in a LaSalle.**

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| 1. Find the coordinates of the midpoint of the segment with the given endpoints.  a. R(3, 1) and S(3, 7)  b. V(2, 4) and W(6, 6) | 2. The endpoints of QR are *Q*(–5, 1) and  *R*(6, 5).  a. Graph the coordinates.    b. Find the coordinates of the midpoint *M*. |
| 3. Describe in your own words how to find the midpoint of two endpoints in the coordinate plane. | 4. Now that you know how to find the midpoint from two endpoints, tweak your understanding of the formula to uncover a way to divide a line segment into three equal parts. What would the formula look like to find the coordinate that is one-third the distance from the first endpoint? |
| 5. Teresa encountered this problem: “Find the midpoint if the coordinates of the endpoints are (-4, -10) and (6, 7)”.  She proceeded by adding -4 and -10 and dividing by two for the x- coordinate and adding 6 and 7 and dividing by two for the y- coordinate. Her final answer was a (-7, 6.5). Given that Lucy’s response was incorrect, explain the error in her reasoning. Then find the correct answer. | |

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| 6. Find the other endpoint of the line segment with the given endpoint and midpoint.     * Check by using endpoints to calculate midpoint: | 7. Find the other endpoint of the line segment with the given endpoint and midpoint.     * Check by using endpoints to calculate midpoint: |
| 8. The midpoint of *XZ* is *M*(1, 2). One endpoint is *X*(0, -2). Find the coordinates of endpoint *Z.*   * Check by using endpoints to calculate midpoint: | 9. The midpoint of *AB* is *M*(8,-8). One endpoint is A(-4, 10). Find the coordinates of endpoint *B.*   * Check by using endpoints to calculate midpoint: |
| 10. Tomas was uncertain about finding an endpoint given a midpoint and the other endpoint. Explain in your own words a method of finding this. | |
| 11. Use the diagram to decide whether the given statement is *true* or *false*.   1. Points E, G, and F are collinear. \_\_\_\_\_\_\_\_\_\_ 2. Points E, G, and F are coplanar. \_\_\_\_\_\_\_\_\_\_ 3. Points *H*, *I*, and *G* are collinear. \_\_\_\_\_\_\_\_\_\_ 4. Points *H*, *I*, and *J* are coplanar. \_\_\_\_\_\_\_\_\_\_ |  |